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ABSTRACT

Social disorganization is the primary theory by which criminologists account for crime rates. Current versions of social disorganization theory assume that strong networks of social relationship prevent crime and delinquency. A community's capacity to develop and maintain strong systems of social relationship is influenced by residential instability, ethnic diversity, family disruption, economic status, population size or density, and proximity to urban areas. A study examined whether the relationships between community characteristics and rates of crime and delinquency are the same in urban and nonurban settings. Data from Uniform Crime Reports were used to measure delinquency rates in 264 nonmetropolitan counties in Florida, Georgia, Nebraska, and South Carolina. Findings indicate that the principles of social disorganization theory can be applied to rural communities. In the counties studied, per capita rates of juvenile arrest for violent offenses were significantly and consistently associated with residential instability, ethnic diversity, and family disruption. Family disruption appeared to be a critical element of nonmetro social disorganization. No association was found between poverty and delinquency or between proximity to urban areas and delinquency. For counties with more than 4,000 juveniles, population size made little difference in the rate of juvenile violence. Findings were consistent across the set of violent offenses. (TD)

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Community Correlates of Rural Youth Violence

D. Wayne Osgood and Jeff M. Chambers

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A Message From OJJDP

Although decades of research have shed considerable light on the nature of the causes and correlates of juvenile delinquency, for the most part these studies have focused on youth crime in large metropolitan settings and generally overlooked delinquency in rural towns and smaller cities.

Since only half the U.S. population (49 percent) lives in urban areas of 500,000 or more, while a quarter (25 percent) lives in rural areas of 2,500 or fewer and 1 in 10 (12 percent) lives in towns or cities of 2,500 to 50,000, this leaves a considerable gap in research coverage, with virtually as many excluded as included.

This Bulletin addresses the lack of knowledge of rural youth violence by applying social disorganization theory to community correlates of youth violence in nonmetropolitan communities in Florida, Georgia, Nebraska, and South Carolina.

According to this theory, rates of youth violence are considerably higher in communities that have large percentages of children living in single-parent households, a high rate of population turnover, and significant ethnic diversity—whether in rural or urban settings. Of course, these are but a few of the myraid of variables that may enter into the equation.

The findings on youth violence in nonmetropolitan communities reported in these pages will help guide program development and future research to better serve rural youth and their families.

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Acknowledgments

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Introduction

Rates of crime and delinquency vary widely across communities, and research going back many decades provides a good understanding of the nature, correlates, and probable causes of these community differences. Unfortunately, previous studies have been limited in an important way. Virtually all studies of communities and crime are based on large urban areas, almost totally excluding nonmetropolitan areas—that is, rural areas and smaller cities and towns. The findings in this Bulletin help to fill some gaps in the research by examining variations in rates of juvenile violence across nonmetropolitan communities in Florida, Georgia, Nebraska, and South Carolina.

Social disorganization is the primary theory by which criminologists account for rates of crime in urban communities. If this theory also applies to rural settings, then what is known about crime in urban areas can provide a basis for developing programs that address the problem of delinquency in smaller communities. The research presented in this Bulletin indicates that the principles of social disorganization theory hold up quite well in rural settings. As in urban areas, rates of juvenile violence are considerably higher in rural communities that have a large percentage of children living in single-parent households, a high rate of population turnover, and significant ethnic diversity. These factors, it should be noted, are statistical correlates and not causes of such violence; nor are they the only correlates.

Research limited to large urban areas leaves out as much of the U.S. population as it captures. According to the 1990 census (U.S. Department of Commerce, 1992), only 49 percent of the U.S. population lives in urbanized areas of 500,000 or more, 25 percent lives in fully rural settings (i.e., places with populations of no more than 2,500), and another 12 percent lives in towns or cities of fewer than 50,000 population. (The remaining 14 percent lives in midsized urban areas with populations between 50,000 and 500,000.) Although overall crime rates are higher in urban than in rural areas (Maguire and Pastore, 1995), this difference is not as large as is widely assumed, and crime rates in small towns and rural areas vary considerably.

Several researchers on crime have called for more focus on rural settings, which have unique crime problems (e.g., the theft of agricultural equipment and commodities) (Smith and Huff, 1982; Swanson, 1981; Weisheit, Wells, and Falcone, 1995). Equally important are the striking similarities that exist between urban and rural areas. For instance, there are comparable crime trends over time, and the relationship of crime to important factors such as age, sex, and race of the perpetrator and victim is nearly identical (Bachman, 1992; Laub 1983a, 1983b).

Laub (1983b) concluded that most individual-level theories of crime and delinquency, developed in reference to urban settings, are likely to apply to rural settings. The question of whether the relationship between community characteristics and rates of crime and delinquency is the same in both urban and nonurban settings requires additional study. The rural-urban dimension (i.e., whether a community is rural, urban, or somewhere in between) is itself an essential aspect of communities, and current theories of communities and crime would be far more useful if they applied to communities at all points on the rural-urban continuum. To determine whether the theories are widely applicable, the authors conducted a county-level analysis of youth violence to test whether social disorganization theory (Shaw and McKay, 1942) applies to nonmetropolitan communities.

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Social Disorganization and Rural Communities

Social disorganization is defined as an inability of community members to achieve shared values or to solve jointly experienced problems (Bursik, 1988). In recent decades, the themes of social disorganization theory have been more clearly articulated and extended by Kornhauser (1978), Bursik and Grasmick (1993), and Sampson and Groves (1989). Shaw and McKay traced social disorganization to conditions endemic to the urban areas that were the only places the newly arriving poor could afford to live, in particular, a high rate of turnover in the population (residential instability) and mixes of people from different cultural backgrounds (ethnic diversity). Shaw and McKay's analyses relating delinquency rates to these structural characteristics established key facts about the community correlates of crime and delinquency, and their work remains useful today as a guide for efforts to address crime and delinquency at the community level.

Both theoretical development and empirical research in the study of community influences on crime and delinquency have focused on urban settings. For instance, studies of neighborhood differences in crime rates have been conducted in many of the largest cities in the United States (including Baltimore, MD; Boston, MA; Chicago, IL; New York, NY; and San Diego, CA), but only one such study has been conducted in a smaller city—Racine, WI. Nonmetropolitan areas have been included in some studies of communities and crime, but that research is of limited value for the purposes of this Bulletin. Some of those studies were based on national samples with both urban and rural respondents, but they did not separately examine patterns for nonmetropolitan communities (Sampson, 1985; Sampson and Groves, 1989). Other studies analyzed crime or delinquency in rural communities, but they were either very limited in scope (e.g., Arthur, 1991, was limited to 13 counties; Petee and Kowalski, 1993, is only 3 pages long) or concerned with different issues (Wilkinson, 1984).

Extending Social Disorganization Theory

Current versions of social disorganization theory assume that strong networks of social relationships prevent crime and delinquency (Kornhauser, 1978; Bursik and Grasmick, 1993; Sampson and Groves, 1989). When most community or neighborhood members are acquainted and on good terms with one another, a substantial portion of the adult population has the potential to influence each child. The larger the network of acquaintances, the greater the community's capacity for informal surveillance (because residents are easily distinguished from outsiders), for supervision (because acquaintances are willing to intervene when children and juveniles behave unacceptably), and for shaping children's values and interests. According to the current theory, community characteristics such as poverty and ethnic diversity lead to higher delinquency rates because they interfere with community members' abilities to work together (see citations above).

Just as in urban areas, systems of relationships are relevant to crime and delinquency in small towns and rural communities. The only aspect of the theory specific to urban areas is the explanation of why social disorganization arises in some geographic locations and not in others.

Rural sociologists concerned with the disruptive effects of rapid population growth provide some evidence that the processes of social disorganization apply in rural settings. Freudenberg (1986), for example, argued that the "boomtown" phenomenon brings high rates of crime and other unacceptable behaviors but does not produce alienation or mental health difficulties. Furthermore, he explained these negative effects by the same logic as social disorganization theory: rapid growth greatly diminishes the proportion of people who know one another, which in turn interferes with surveillance and socialization of the young (Freudenberg, 1986).

Community Correlates of Youth Violence Outside the City

Social disorganization theory specifies that several variables—residential instability, ethnic diversity, family disruption, economic status, population size or density, and proximity to urban areas—influence a community's capacity to develop and maintain strong systems of social relationships. To test the theory's applicability to nonmetropolitan settings, this Bulletin examines the relationships between these community variables and rates of offending because the same relationships provide the core empirical support for the theory in urban settings. This section discusses the relevance of each factor to delinquency rates in the social disorganization framework.

Residential instability. Based on research in urban settings, the authors expected that rates of juvenile violence in rural communities would increase as rates of residential instability increased. When the population of an area is constantly changing, the residents have fewer opportunities to develop strong, personal ties to one another and to participate in community organizations (Bursik, 1988). This assumption has been central to research on social disorganization since its inception. Massive population change is also the essential independent variable underlying the boomtown research on rural settings (Freudenberg, 1986).

Ethnic diversity. According to social disorganization theory, it could be expected that, as in urban areas, rates of juvenile violence would be higher in rural communities with greater ethnic diversity. According to Shaw and McKay (1942), ethnic diversity interferes with communication among adults. Effective communication is less likely in the face of ethnic diversity because differences in customs and a lack of shared experiences may breed fear and mistrust (Sampson and Groves, 1989). It is important to distinguish this theoretically driven hypothesis about heterogeneity from simple ethnic differences in offense rates. In other words, this hypothesis sees crime as arising from relations between ethnic groups, not from some groups being more crime-prone than others.

Family disruption. Research in urban areas has found that delinquency rates are higher in communities with greater levels of family disruption, and the authors expected that this also would be true in rural areas. Sampson (1985; Sampson and Groves, 1989) argued that unshared parenting strains parents' resources of time, money, and energy, which interferes with their ability to supervise their children and communicate with other adults in the neighborhood. Furthermore, the smaller the number of parents in a community relative to the number of children, the more limited the networks of adult supervision will be for all the children.

Economic status. Although rates of juvenile violence are higher in urban areas with lower economic status, it was not clear that this relationship should apply in rural settings. The role of economic status in social disorganization theory is based on patterns of growth in urban areas. In many major urban areas, growth leads to the physical, economic, and social decline of the residential areas closest to the central business district. These areas then become most readily available to the poor and to groups who migrate to the area. As a result, areas with the lowest average socioeconomic status will also have the greatest residential instability and ethnic diversity, which in turn will create social disorganization (Bursik and Grasmick, 1993). Accordingly, many studies have found that urban neighborhoods with high rates of poverty also have greater rates of delinquency (Warner and Pierce, 1993).

The processes that link poverty with population turnover are specific to urban settings. In nonmetropolitan settings, poor populations may be stable and ethnically homogeneous.

Population density. Population density is rather different from the other community factors for two reasons. First, evidence of a relationship between population density and

urban crime and delinquency is inconsistent. Second, the meaning of density becomes quite different for nonurban communities, where, in the least dense areas, one must travel several miles to have significant contact with people outside of one's immediate family. The original reasoning for the urban context was that high population density creates problems by producing anonymity that interferes with accountability to neighbors. In the least dense rural areas, it may be social isolation, instead, that limits social support to monitor children and respond to problem behavior. On the other hand, Sampson (1983) suggested that density might be more important in terms of opportunities for offending than in terms of social disorganization. The relative isolation of living in a sparsely populated area may reduce opportunities for offending because of greater distance from targets and from potential companions in crime (Cohen and Felson, 1979; Osgood et al., 1996). This possibility is supported by Laub's (1983b:189) finding that victimization rates are lowest in communities with the smallest populations, but only for populations of 25,000 or less. In larger communities, the rates were essentially unrelated to population size.

Proximity to urban areas. This final community variable, which departs from the themes of current social disorganization theory, considers an issue specific to rural settings and to the linkages among communities. As Heitgerd and Bursik (1987) have argued, it is important to look beyond the internal dynamics of communities and consider ways in which rates of delinquency might be influenced by relationships between neighboring communities. Various rural and suburban communities have very different relationships with urban communities, and this is an important theme of research on rural settings. Heitgerd and Bursik suggested that "less delinquent groups of youths are being socialized into more sophisticated types of criminal behavior by youths in adjoining areas" (1987: 785). Because average crime rates are higher in communities with larger populations, this phenomenon would produce higher rates of delinquency in rural communities that are adjacent to metropolitan areas. Previous research has not addressed this topic, however, so it is not clear whether such diffusion actually occurs and, if it does, whether it is strong enough to produce higher rates of juvenile violence in counties adjacent to urban areas.

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Methods

Sample

The sample consists of the nonmetropolitan counties in Florida, Georgia, Nebraska, and South Carolina.[1] The standard unit of analysis for research in the urban setting has been neighborhoods no more than a few miles across. This conception of community does not generalize very well for rural settings, where population density is much lower. The county is a convenient unit of analysis for the study of community influences on rural crime rates because both arrest data, taken from the Federal Bureau of Investigation's *Uniform Crime Reports* (UCR), and population characteristics, from U.S. Bureau of the Census population reports, are available at the county level. The county is also a common unit of analysis in rural research of all types because counties typically have strong internal economic and governmental structures. It should not be forgotten, however, that most counties include several distinct communities. The county level of analysis was necessitated by the availability of data, but it is not ideal.

The analysis was limited to counties not included in metropolitan statistical areas by the U.S. Bureau of the Census. These counties lack cities with populations of 50,000 or more, and less than 50 percent of their population resides in metropolitan areas with a population of 100,000 or more. Thus, residents of these counties live in smaller cities, towns, and open country rather than in moderate to large cities and their suburbs.

The study sample included 264 counties with populations ranging from 560 to 98,000. Although these nonmetropolitan counties are much larger geographic units than areas analyzed in community-level research on crime in metropolitan settings, they are of equal or smaller size in terms of population. The average total population of these nonmetropolitan counties was roughly 10,000, which is comparable to the smallest units used in research on urban neighborhoods (Sampson, Raudenbush, and Earls, 1997; Warner and Pierce, 1993). This sample compares favorably with those in studies of urban areas in terms of the number of communities, the size of the populations, and the variety of communities included.

Measures

Delinquency. UCR data (Federal Bureau of Investigation, 1998) were used to measure each county's delinquency rate. These data are the logical starting point for analyses of crime and delinquency in rural areas, and previous community-level studies of rural crime have relied on the same source. No measure of crime or delinquency is perfect, and criminologists have long been concerned about potential biases in crime rates based on official records, especially that arrests might reflect the behavior of law enforcement officers more than the behavior of offenders. Fortunately, findings relating social disorganization to arrests have been replicated by more recent studies that measured offending through citizen calls for police assistance (Warner and Pierce, 1993), self-reports of victims (Sampson, 1985; Sampson and Groves, 1989), and self-reports of offenders (Elliott et al., 1996).

This study's measure of delinquency was the per capita arrest rate of juveniles ages 11–17 in each county, pooled over the 5-year period from 1989 through 1993. The outcome measures were as follows: rates of arrest for homicide, forcible rape, aggravated assault, robbery, weapons offense, simple assault, and the UCR Violent Crime Index, which comprises the first four offenses. The study considered the full spectrum of violent offenses (capturing a large range of offense seriousness) for which recording is comparable across the four states. This approach provided a rich pool of information for establishing the consistency of the findings.

Table 1 presents descriptive statistics for all of the measures, calculated separately for each state. Rates of arrest for serious violent offenses in nonmetropolitan counties in Florida and South Carolina are considerably higher than in Georgia and Nebraska. Differences are less consistent for simple assaults. Some of these inconsistencies, such as the extremely low rate of simple assault, compared to the Violent Crime Index, in Florida, suggest that police and citizens give less attention to minor offenses in areas with high rates of serious offenses (as noted by Stark, 1987).

Explanatory variables. Data from the 1990 census provide measures for most of the explanatory variables (U.S. Department of Commerce, 1992). As is standard in research on communities and crime, the measure of residential instability was the proportion of households occupied by persons who had moved from another dwelling in the previous 5 years (Sampson, 1985; Warner and Pierce, 1993). Ethnic diversity was measured in terms of the proportion of households occupied by white versus nonwhite persons. Ethnic diversity was computed as the index of diversity, which reflects the probability that two randomly drawn individuals would differ in ethnicity (Blau, 1977). Family disruption was indexed by female-headed households, expressed as a proportion of all households with children. Low economic status was defined as the proportion of persons living below the poverty level. Proximity to urban areas was coded "1" for counties adjacent to a metropolitan statistical area and "0" for counties nonadjacent, based on census classifications (U.S. Government Accounting Office, 1989).

Also included in the analysis was the number of youth ages 10–17, which is the population at risk for juvenile arrests. Population size serves as a proxy measure for population density because the two variables are so strongly correlated that they are effectively indistinguishable. Because states may differ in their statutes and in the organization, funding, and policies of their justice systems, it was important to make sure that differences among states were not confused with the contributions of the explanatory variables. Therefore, the analysis controls for differences among states in arrest rates for each offense.

Table 1: Descriptive Statistics for Nonmetropolitan Counties

	Florida		Georgia		Nebraska		South Carolina	
Measure	**Mean**	**SD***	**Mean**	**SD***	**Mean**	**SD***	**Mean**	**SD***
Population at risk	2,941	2,074	2,287	1,940	1,091	1,152	4,926	2,621
Number of counties	31	-	116	-	87	-	30	-
Explanatory variables								
Residential instability	0.47	0.05	0.41	0.06	0.36	0.06	0.35	0.06
Ethnic diversity	0.28	0.10	0.37	0.15	0.03	0.04	0.45	0.06
Female-headed households	0.18	0.04	0.22	0.07	0.09	0.04	0.24	0.04
Poverty rate	0.16	0.04	0.19	0.05	0.12	0.04	0.19	0.06
Adjacent to urban area	0.74	0.44	0.53	0.50	0.14	0.35	0.80	0.41
Annual arrest rate per 100,000 population								
Violent Crime Index	360.0	350.1	127.1	114.6	27.6	44.7	246.4	144.5
Homicide	12.2	16.8	4.8	9.9	1.0	4.1	10.7	12.2
Forcible rape	19.5	24.7	8.2	12.3	2.8	8.3	25.7	20.0
Robbery	78.5	99.6	23.4	36.0	2.9	9.0	42.3	31.6
Aggravated assault	249.9	237.6	89.5	83.4	20.9	36.1	167.7	106.2
Weapons offense	45.2	52.6	36.9	49.6	22.9	46.5	88.8	47.9
Simple assault	169.9	200.1	159.7	163.8	182.4	318.5	343.9	342.0

* Standard deviation.

Data Analysis

The outcome of interest in this study is the arrest rate, defined as the number of arrests in a county divided by the size of the juvenile population. Standard statistical methods of analyzing crime rates are inappropriate for these data because the population sizes are small relative to the arrest rates, so only very crude estimates of arrest rates are available for the counties with the smallest populations. This problem is resolved with a specialized statistical technique (negative binomial regression) that takes into account the contribution of population size to the accuracy of arrest rates.[2]

Tables 2 and 3 present two versions of the relationships of the explanatory variables to delinquency rates. Table 2 considers each explanatory variable separately, controlling only for overall differences among the states. Table 3 presents the second estimate of each relationship, which controls for all other explanatory variables. The first estimate reflects the overall association of the variable with the rate of juvenile violence (the bivariate relationship), and the second estimate reflects only the association that cannot be accounted for by the other variables (the multivariate relationship). Comparing tables 2 and 3, one can see that the patterns of results are essentially the same, with the magnitude of the relationships typically somewhat higher for the bivariate relationships, and somewhat fewer of the multivariate relationships reaching statistical significance.

Tables 2 and 3 express the relationships in terms of the proportional change in the rate of arrests associated with an increase in the variable.[3] Most of the explanatory variables reflect proportions of the population, such as the proportion living in poverty. The tables indicate the change in arrest rate associated with a 10-percent increase in each explanatory variable. For instance, the first entry in table 2 indicates that the arrest rate of juveniles for violent offenses will average 45 percent higher (e.g., 145 versus 100 per 100,000) for counties with 25-percent residential instability than for counties with 15-percent

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residential instability.

Table 2: Relationship of Explanatory Variables to Juvenile Arrest Rates, Controlling for Overall Differences Among States

	Proportional Difference in the Arrest Rate Associated With a 10-Percent Increase in the Variable						
Variable	Violent Crime Index	Homicide	Forcible Rape	Robbery	Aggravated Assault	Weapons Offense	Simple Assault
Residential instability	45%*	–9%	40%	29%	50%	51%*	65%*
Ethnic diversity	23*	27	27*	35*	20*	25*	20
Female-headed households	82*	33	85*	100*	75*	75*	73*
Poverty rate	3	49	2	19	–2	–8	–31*
Counties adjacent to metropolitan areas (versus counties nonadjacent)	2	45	–6	–21	9	–10	10

Note: The states explored are Florida, Georgia, Nebraska, and South Carolina. The relationships were estimated using negative binomial regression.
* $p < .05$

Table 3: Relationship of Explanatory Variables to Juvenile Arrest Rates, Controlling for All Other Explanatory Variables and Differences Among States

	Proportional Difference in the Arrest Rate Associated With a 10-Percent Increase in the Variable						
Variable	Violent Crime Index	Homicide	Forcible Rape	Robbery	Aggravated Assault	Weapons Offense	Simple Assault
Residential instability	33%*	3%	45%	2%	44%	20%*	40%*
Ethnic diversity	18*	27	12	33*	12*	23*	21*
Female-headed households	70*	–29	167*	45*	89*	72*	88*
Poverty rate	–18	84	–48*	0	–25	–32	–39*
Counties adjacent to metropolitan areas (versus counties nonadjacent)	-13	45	–17	–37*	–3	–27	–8

Note: The states explored are Florida, Georgia, Nebraska, and South Carolina..The relationships were estimated using negative binomial regression.
* $p < .05$

Overall, the analysis found that one or more of the social disorganization variables were significantly associated with arrest rates for all of the violent offenses except homicide. Low numbers of homicides limited the researchers' ability to detect differences in the homicide rates; 69 percent of the counties in the sample recorded no homicides during the 5-year study period.

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Results

Residential Instability, Ethnic Diversity, and Family Disruption

In research on social disorganization in urban settings, the three variables most strongly and consistently associated with rates of crime and delinquency are residential instability, ethnic diversity, and family disruption. In the four states in this study, a similar pattern was found in nonmetropolitan counties (see tables 2 and 3).

Social disorganization theory holds that when turnover in the membership of a community is high, social relationships will weaken and juvenile violence will increase. Consistent with this theory, the study data showed that residential instability was significantly associated with higher rates of aggravated assault, simple assault, weapons violations (bivariate relationship only), and the overall Violent Crime Index. This relationship was marginally significant for rape ($p < .10$ for both estimates). The connection between residential instability and delinquency appears to be quite strong. In the bivariate associations of table 2, a 10-percent increase in residential instability was associated with 29- to 65-percent higher rates of arrest for the various forms of juvenile violence, with the exception of homicide.

Ethnic diversity is also a key variable because cultural differences tend to interfere with adults' ability to work together in supervising and raising their children. The correlation between ethnic diversity and violent offenses was statistically significant in most instances. In the bivariate relationships, a 10-percent increase in ethnic diversity was associated with 20- to 35-percent higher rates of juvenile violence.

The reader may wonder whether the results for ethnic diversity truly reflect diversity or if that variable is merely a proxy for the proportion of minority group members in the population. These variables are too highly correlated to address this question directly by including both in the same model. To gain some perspective on the issue, the authors estimated models that replaced ethnic diversity with the proportion of the population that was nonwhite. The nonwhite percentage was less strongly related to arrest rates, suggesting that diversity is the more important variable.

Higher levels of family disruption, as indexed by the proportion of female-headed households, also were strongly and consistently associated with higher rates of arrest for violent offenses other than homicide. According to social disorganization theory, this pattern arises from the burden of single parenting, which interferes with parents' abilities to work together and reduces the number of adults involved in the joint supervision of children. The relationship between family disruption and juvenile arrest rates was the strongest in the study's results. In the bivariate relationships, this relationship was significant for all offenses except homicide, and in the multivariate relationships, it was significant for all offenses except homicide and robbery. In the bivariate relationships, a 10-percent increase in female-headed households was associated with 73- to 100-percent higher rates of arrest for all offenses except homicide.

In combination, residential instability, ethnic diversity, and family disruption strongly differentiated counties with high rates of arrest from those with low rates. Compare, for example, a county with 35-percent residential instability, ethnic diversity of 0.23 (on a scale of 0 to 0.5), and 13-percent female-headed households, which would be a moderately low level of social disorganization, with one that has 45-percent residential instability, ethnic diversity of 0.33, and 23-percent female-headed households, which would be a moderately high level. The multivariate relationships shown in table 3 (which control for all other explanatory variables) indicate that the arrest rate for the Violent Crime Index in the more disorganized county would be $2\ ^{2/3}$ times as great as that of the less disorganized county (217 per 100,000 versus 81 per 100,000).

Economic Status

The analysis did not find a meaningful relationship between rates of delinquency and rates of poverty.[4] Instead of showing poverty to be associated with higher rates of delinquency, the relationships were either very slight or indicated an association between poverty and lower delinquency rates (significantly lower rates for simple assault and rape).

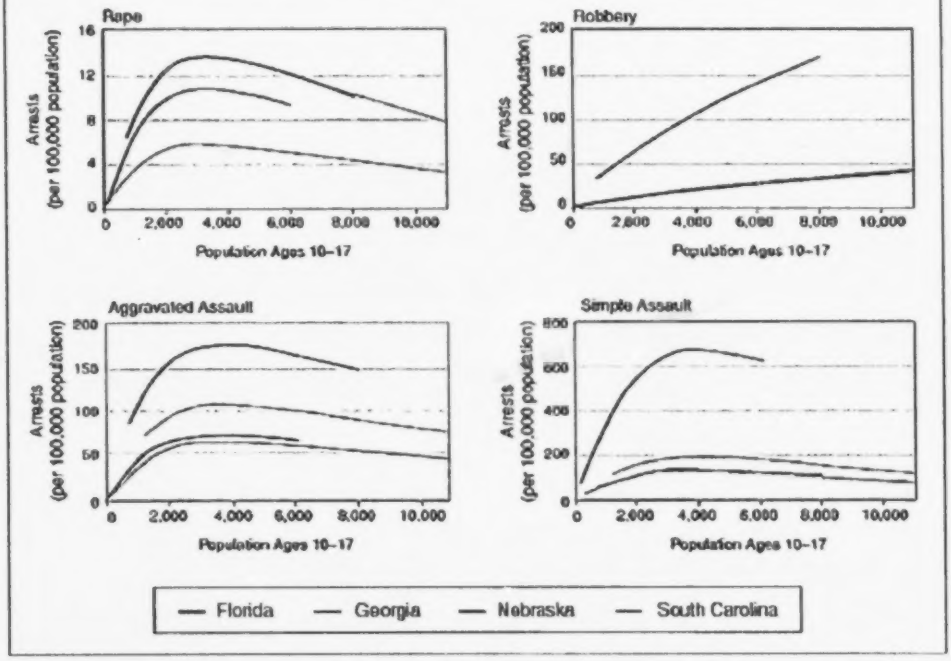
To understand this finding, it is useful to examine the association between poverty rates and the other community correlates of juvenile violence. As research in urban areas has typically found (Warner and Pierce, 1993), poverty rates in the study's nonmetropolitan counties were positively associated with both ethnic diversity ($r = .48$, controlling for state) and the rate of female-headed households ($r = .55$). In contrast to urban areas, however, the correlation between poverty and residential instability in these nonmetropolitan areas was negative rather than positive ($r = -.39$). This finding contradicts the classic pattern of relationships from Park and Burgess's (1924) theory of urban ecology, which was the basis for predicting that poverty would lead to social disorganization. Also in contrast to findings in urban areas, poverty rates were higher in nonmetropolitan counties with smaller populations than in those with larger populations ($r = -.41$). Poverty rates increase as ethnic diversity and the proportion of female-headed households increase, suggesting that delinquency rates will increase along with poverty rates. However, this source of positive correlation between the rates of poverty and delinquency is canceled out in nonmetropolitan areas, where rates of poverty are lower in areas with high residential instability and larger populations.

This pattern of relationships is consistent with research conducted by Fitchen (1994), who found that poorer residents do not make frequent moves in rural areas. Low-cost housing is often abundant, and residents have a support network of family and friends who can provide casual rent agreements and flexible payment schemes. It appears that—unlike in most urban areas—poverty does not disrupt the social fabric of small towns and rural communities. The reasons that a high rate of rural poverty does not increase the delinquency rate appear to be consistent with social disorganization theory.

Population Size and Density

Arrest rates for juvenile violence varied dramatically with differences in the sizes (and densities) of juvenile populations. The figure illustrates these findings with graphs for four of the studied offenses. For all violent offenses except homicide, differences in the size of county juvenile populations corresponded to differences of at least threefold in juvenile arrest rates. The figure shows that annual arrest rates for juvenile violence were uniformly lower in the rural counties with the smallest populations. Per capita arrest rates rose with increases in juvenile population, but only until the population size reached about 4,000. Beyond this level, increasing population had little impact on arrest rates for violent offenses other than robbery.[5] These results are comparable to Laub's (1983b) finding that victimization rates increased with population size for total populations (rather than juvenile populations) up to about 25,000, but did not increase further for larger populations. Arrest rates for the Violent Crime Index, rape, and aggravated assault appeared to decline somewhat in the upper range of juvenile population sizes, but it is unlikely that these decreases are statistically reliable because they are small.

Relationship of Population Size to Arrest Rates for Four Violent Offenses, Controlling for Other Explanatory Variables



Proximity to Metropolitan Areas

Whether a rural county was adjacent to a metropolitan area had little bearing on its rate of juvenile arrests for violent offenses. None of the relationships for this explanatory variable approached statistical significance. If delinquency can spread from one community to another, the reason is not simple enough to be explained by the county's proximity to a metropolitan area.

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Conclusion

The principles of social disorganization theory, developed in studies of urban neighborhoods, can be applied to rural communities. In the nonmetropolitan counties that made up the study sample, per capita rates of juvenile arrest for violent offenses were significantly and consistently associated with residential instability, ethnic diversity, and family disruption. Based on the strength and consistency of the findings, family disruption, in particular, appears to be a critical element of social disorganization in nonmetropolitan communities.

The study results diverged from the standard findings for urban areas in that they indicated no association between poverty and delinquency. When the correlates of poverty for this sample of nonmetropolitan communities are considered, however, this finding is consistent with the core logic of social disorganization theory. Shaw and McKay (1942) concluded that the relationship of poverty to delinquency in urban areas is produced by the connection of poverty with the combination of residential instability and ethnic diversity. This urban population dynamic does not exist in small towns and rural areas; outside the city, the populations of poorer communities are more stable than average, not less. Thus, these findings support Shaw and McKay's contention that it is not poverty per se but an association of poverty with other factors that weakens systems of social relationships in a community, thereby producing social disorganization.

Population Size and Density

The findings concerning the relationship of juvenile violence to the size and density of the juvenile population have interesting implications. Based on social disorganization theory, the authors hypothesized that high population density would interfere with social organization by creating anonymity and by increasing the difficulty of supervising children and adolescents. This reasoning implies that problems would intensify in areas with especially high population densities. The findings show the opposite: after reaching the modest density of about 4,000 juveniles in an entire county, population size makes little difference in the rate of juvenile violence. Clearly, another dynamic must be at work.

The relationship between population size and juvenile violence is more likely due to increased opportunities for offending in areas with larger populations (Sampson, 1983). A small population reduces the chances that a potential robber will randomly encounter a likely victim or that two rivals will meet in an unguarded setting conducive to an assault (Cohen and Felson, 1979). Furthermore, the company of peers provides support for engaging in delinquent behavior (Osgood et al., 1996), and a very low population density makes it more difficult for peers to get together.

Consistency Across Violent Offenses

The findings are consistent across the set of violent offenses. Many researchers limit their analyses to a few offenses that they presume to be most reliably recorded, such as homicide and robbery. Indeed, there can be little doubt that law enforcement officers have less discretion about whether to make arrests for these offenses or that victims and bystanders are more likely to report them. Nevertheless, the relationships of community characteristics to the rate of simple assaults are nearly identical to those for the other violent offense categories such as rape and aggravated assault. Thus, instead of finding inconsistent results for less serious offenses, the data provided additional confirmation for the overall pattern of results.

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Directions for Future Research

This study of juvenile violence in nonmetropolitan communities has successfully extended research on communities and crime beyond urban centers to small cities and rural communities. The themes from social disorganization theory have a broader application to communities of all sizes. Data from nonmetropolitan communities can be especially useful for testing and expanding social disorganization theory because they present different patterns of community variables. For instance, the findings related to poverty and crime suggest that nonmetropolitan communities may provide the setting in which the direct impact of poverty on community disorganization can be determined. Thus, social disorganization and related theories are appropriate starting points for developing either theories of crime specific to rural settings or theories of communities and crime that are general across settings. Developing such theories will require a firm grounding in the modern realities of settings ranging from small cities to isolated farming communities to the suburbs that surround urban cores. For too long, theories of communities and crime have limited their attention to an image of small, dense urban neighborhoods that fully encompass the lives of their inhabitants, and that image is out of sync with life in most communities in the United States today.

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Endnotes

1. Many other states would be appropriate for this purpose. Florida, Georgia, Nebraska, and South Carolina were chosen because the larger project through which this research was funded focused on the southeastern United States. Because of regional variations in both crime and the structural correlates specified in social disorganization theory, this study includes a midwestern plains state to assess, for a second region, the generalizability of the findings.

2. For a detailed discussion of these statistical problems and their resolution, see Osgood, 2000.

3. This is a simple means of conveying the information in the regression coefficients of the negative binomial analysis. That statistical model assumes a logarithmic relationship between the explanatory variable and the outcome, which implies that unit differences on the social disorganization variables are associated with proportional differences on delinquency rates.

4. Although the analysis included the unemployment rate as a second index of economic status, the results for this variable were not very informative because the rates varied so little within each state that the estimates were too imprecise to be meaningful. Although unemployment was associated with higher rates of most of the offenses examined, none of those relationships approached statistical significance ($p > .35$ in all cases). For a complete presentation of these analyses, see Osgood and Chambers, 2000.

5. This implies that the relationship was curvilinear. In technical terms, the analyses allowed for curvilinearity by adding the square and cube of population size as additional terms in the regression model. There was significant evidence of a curvilinear relationship for the Violent Crime Index, aggravated assault, and simple assault. For rape, the deviation from linearity was of borderline significance, as was the overall relationship of population size to offending ($p < .10$).

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Animal Abuse and Youth Violence (NCJ 188677). 2001. This OJJDP Bulletin describes psychiatric, psychological, and criminal research linking animal abuse to interpersonal violence perpetrated by juveniles and adults. Particular attention is focused on the prevalence of cruelty to animals by children and adolescents and on the role of animal abuse as a possible symptom of conduct disorder. In addition, the motivations and etiology underlying the maltreatment of animals are thoroughly reviewed. The Bulletin includes recommendations to curb such cruelty and provides contact information for additional resources concerned with violence perpetrated against animals and people. *Available at ojjdp.ncjrs.org/pubs/violvict.html#188677.*

Gun Use by Male Juveniles: Research and Prevention (NCJ 188992). 2001. This OJJDP Bulletin examines patterns of gun ownership and gun carrying among adolescents, drawing on data from OJJDP's Rochester Youth Development Study. The Bulletin, which is part of the Youth Development Series, also addresses the interrelationship between gangs and guns and describes prevention programs, including the Boston Gun Initiative, the Office of Community Oriented Policing Services' Youth Firearms Violence Initiative, and OJJDP's Partnerships To Reduce Juvenile Gun Violence Program. Effective efforts to reduce illegal gun carrying and gun violence among youth require the support and participation of multiple community agencies. The information presented in this Bulletin is intended to enhance those efforts. *Available at ojjdp.ncjrs.org/pubs/violvict.html#188992.*

Juvenile Delinquency and Serious Injury Victimization (NCJ 188676). 2001. This OJJDP Bulletin draws on data from two OJJDP longitudinal studies on the causes and correlates of juvenile delinquency—the Denver Youth Survey and the Pittsburgh Youth Study—to explore the interrelationship between delinquency and victimization. The Bulletin, part of the Youth Development Series, focuses on victims of violence who sustained serious injuries as a result of the victimization. Being victimized may lead to victimizing others. The studies found that many victims were prone to engage in illegal activities, associate with delinquent peers, victimize other delinquents, and avoid legal recourse in resolving conflicts. A clearer understanding of the patterns and predictors of victimization offers the potential for increased effectiveness in designing and implementing strategies to reduce both victimization and offending. *Available at ojjdp.ncjrs.org/pubs/violvict.html#188676.*

Short- and Long-Term Consequences of Adolescent Victimization (NCJ 191210). 2002. This Bulletin is part of the Youth Violence Research Bulletin Series, which is produced jointly by OJJDP and the Centers for Disease Control and Prevention. It analyzes National Youth Survey (NYS) data to explore how being a victim of crime during adolescence affects the likelihood of certain negative outcomes in adulthood, including violent and property offending and victimization, domestic violence perpetration and victimization, drug use, and mental health problems. The NYS data reflect the experiences of approximately 1,700 respondents at ages 11–17 and 21–29. *Available at www.ncjrs.org/pdffiles1/ojjdp/191210.pdf.*

Violent Victimization as a Risk Factor for Violent Offending Among Juveniles (NCJ 195737). 2002. This Bulletin analyzes the relationships between violent

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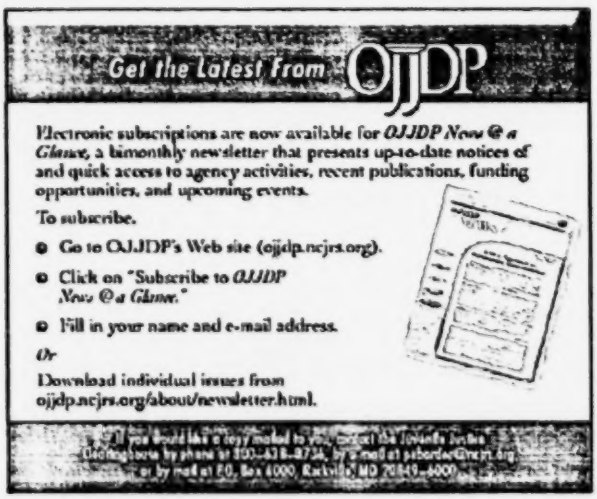
victimization and violent offending among juveniles across a 2–year period, using data for 5,003 youth who participated in the National Longitudinal Study of Adolescent Health. It looks at victimization and offending experiences in subgroups of juveniles classified by age, gender, race, and level of physical development and also identifies risk and protective factors. The analysis demonstrates that violent victimization is a warning signal for future violent offending and that victimization and offending share many of the same risk factors. The authors discuss policy implications of their findings and suggest directions for future research. *Available at www.ncjrs.org/html/ojjdp/jjbul2002_12_1/contents.html.*

Trends in Juvenile Violent Offending: An Analysis of Victim Survey Data (NCJ 191052). 2002. This OJJDP Bulletin presents information on trends in juvenile violent offending over the past two decades, based on data collected from the victims of those offenses by the National Crime Victimization Survey (NCVS). Unlike the data derived from the FBI's Uniform Crime Reports, which drive traditional assessments, the information provided by NCVS is not limited to cases that come to the attention of local law enforcement officials. This Bulletin suggests that examining information from a variety of sources about a range of activities related to juvenile offending will assist efforts to prevent and intervene in such delinquency. *Available at www.ncjrs.org/html/ojjdp/jjbul2002_10_1/contents.html.*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